

CLAIMS

1. An organic EL drive circuit for generating, in response to a predetermined current inputted to an input terminal of a D/A converter circuit constructed with a current mirror circuit, drive currents to be outputted to terminal pins of the organic EL display panel or a current, on which the drive currents are generated, by converting digital display data into analog signal by the D/A converter circuit, comprising:

a first transistor provided between an input side transistor of the current mirror circuit and the input terminal;

a second transistor provided between an output side transistor of the current mirror circuit and an output terminal; and

a third transistor provided between the output terminal and a power source line, wherein proof voltages of the input side transistor, the output side transistor and the third transistor are lower than proof voltage of the first and second transistors.

2. An organic EL drive circuit as claimed in claim 1, wherein the first transistor and the second transistor are biased such that a connecting point of the input side transistor and the first transistor and a connecting point of the output side transistor and the second transistor become substantially equal potentials.

3. An organic EL drive circuit as claimed in claim 2, wherein the connecting points become substantially equal potentials by setting gates or bases of the first

transistor and the second transistor to predetermined constant voltages.

4. An organic EL drive circuit as claimed in claim 3, wherein the first and second transistors are proof against relatively high voltage corresponding to a power source voltage of 10V or more.

5. An organic EL drive circuit as claimed in claim 4, wherein the third transistor is a reset switch.

6. An organic EL drive circuit as claimed in claim 4, wherein the third transistor is one of transistors, which construct an output stage current source for generating the drive current.

7. An organic EL drive circuit as claimed in claim 3, wherein the output terminal is an output terminal of the D/A converter, each of the input side transistor and the output transistor is constructed with a plurality of series-connected transistors between a power source line and a reference potential line and a plurality of the output side transistors are provided in parallel to the input side transistor and are connected to the output terminal, respectively.

8. An organic EL drive circuit as claimed in claim 4, wherein each of the input side transistor and the output side transistor includes a transistor connected in series and constructing a switch circuit and is formed as a cell circuit, the transistor constructing the switch circuit of the input side transistor is set to ON state and the transistor constructing the switch circuit of each of the output side transistors is ON/OFF controlled by the display data.

9. An organic EL drive circuit as claimed in claim 8, wherein the organic EL display panel includes a plurality of the terminal pins and the D/A converter circuits are provided correspondingly to the plurality of the terminal pins, respectively.

10. An organic EL drive circuit as claimed in claim 9, wherein the input side transistor of the current mirror circuit of each of the D/A converter circuits responds to the reference current or a reference drive current generated according to the reference current, which is distributed to each of the terminal pins.

11. An organic EL drive circuit as claimed in claim 10, wherein the output terminals are connected to data line of an active matrix type organic EL display panel.

12. An organic EL drive circuit as claimed in claim 6, wherein the output terminal is an output terminal of the output stage current source and connected to column lines of a passive matrix type organic EL display panel.

13. An organic EL display device comprising an organic EL drive circuit claimed in any of claims 1 to 12.